

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 07 NOV 2006

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Applicant's or agent's file reference 71189-1683	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US05/06360	International filing date (day/month/year) 01 March 2005 (01.03.2005)	Priority date (day/month/year) 02 March 2004 (02.03.2004)	
International Patent Classification (IPC) or national classification and IPC IPC: A47L 5/28(2006.01),9/16(2006.01),9/28(2006.01),9/00(2006.01),9/32(2006.01) USPC: 15/324,329,352,353,383,DIG 1			
Applicant BISSELL HOMECARE, INC.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>2</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>4</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability, citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 19 December 2005 (19.12.2005)		Date of completion of this report 03 October 2006 (03.10.2006)	
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Theresa T. Snider Telephone No. (571) 272-1300	

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US05/06360

Box No. I Basis of the report1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4(a))
 - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☐ the international application as originally filed/furnished
- ☒ the description:
pages 1-13 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the claims:
pages NONE as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* 14-17 received by this Authority on 19 December 2005
pages* NONE received by this Authority on _____
- ☒ the drawings:
pages 1/13-13/13 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

** If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US05/06360**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-21 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest all the elements of claim 1 with the particle separator being a cyclone separator. Claims 21-22, they meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest all the elements of claim 21 with an elongated flexible hose having a first end connected to the inlet of the separator and a second end removably coupled to the air conduit coupling.

Claims 1-22 meet the criteria set out in PCT Article 33(4), and thus possess industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US05/06360

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

Claims 1-20 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: Claim 1, line 14, claim 19, line 3 and claim 20, line 2, 'particle' should be inserted after 'cyclone'. Claim 7, line 3, 'changing' should be replaced with 'charging'.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US05/06360

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 21-22 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 21-22 are indefinite for the following reason(s): claim 21, line 17, 'cyclone' should be deleted and line 18, 'the suction conduit' lacks proper antecedent basis.

CLAIMS

What is claimed is:

1. A vacuum cleaner comprising:
 - a foot assembly having a suction nozzle;
 - an upright handle assembly pivotally mounted to the foot assembly for manipulation of the foot assembly along a surface to be cleaned; and
 - 5 a portable cleaning module detachably mounted to the handle assembly so that the vacuum cleaner can be operated as an upright vacuum cleaner when the portable cleaning module is mounted to the handle assembly or as a portable vacuum cleaner when the portable cleaning module is detached from the handle assembly, the portable cleaning module comprising:
 - 10 a module housing;
 - a cyclone particle separator mounted to the module housing and having an inlet;
 - a suction conduit having a first end connected to the inlet of the cyclone separator and a second end removably coupled to the suction nozzle;
 - 15 a motor and fan assembly supported in the module housing for creating a working air flow from the suction nozzle to the cyclone particle separator through the suction conduit; and
 - a portable power source coupled to the motor and fan assembly for supplying power to the motor and fan assembly when the portable cleaning
 - 20 module is detached from the handle assembly for operation of the vacuum cleaner as a portable vacuum cleaner.
2. The vacuum cleaner according to claim 1 wherein the portable power source is adapted to supply power to the motor and fan assembly when the portable cleaning module is mounted to the handle assembly for operation of the vacuum cleaner as an upright vacuum cleaner.
3. The vacuum cleaner according to claim 1 wherein the portable power source comprises a battery pack.

4. The vacuum cleaner according to claim 3 wherein the battery pack comprises a rechargeable battery.
5. The vacuum cleaner according to claim 1 and further comprising a charging unit mounted in one of the foot assembly and the portable cleaning module and selectively coupled to the portable power source for charging the portable power source.
6. The vacuum cleaner according to claim 5 and further comprising a transformer in electrical communication with the charging unit and a stationary power source for converting alternating current from the stationary power source to direct current for the portable power source.
7. The vacuum cleaner and charging base assembly comprising a vacuum cleaner according to claim 1 and a charging base to which the foot assembly removably docks, the charging base comprising a charging unit that connects to the portable power source for charging the power source when the foot assembly is
5 docked with the charging base.
8. The vacuum cleaner according to claim 1 and further comprising an agitator driven by an agitator motor, both mounted to the foot assembly, and the portable cleaning module comprises an interlock switch in communication with the agitator motor, wherein the interlock switch closes when the portable cleaning module
5 is mounted to the handle assembly to electrically couple the portable power source with the agitator motor.
9. The vacuum cleaner according to claim 8 and further comprising a user operated agitator switch between the portable power source and the interlock switch for controlling power to the agitator motor.
10. The vacuum cleaner according to claim 9 and further comprising a user operated main power switch between the portable power source and agitator switch.
11. The vacuum cleaner according to claim 9 and further comprising a lamp mounted to the foot assembly and electrically connected to the interlock switch

so that the portable power source supplies power to the lamp when the portable cleaning module is mounted to the handle assembly and the agitator switch is closed.

12. The vacuum cleaner according to claim 1 and further comprising a user operated main power switch between the portable power source and the motor and fan assembly for controlling power to the motor and fan assembly.

13. The vacuum cleaner according to claim 12 and further comprising a power cord coupled to the main power switch and having a plug that can be removably coupled to a stationary power source for providing power to the motor and fan assembly.

14. The vacuum cleaner according to claim 13 wherein the power cord is mounted to the portable cleaning module.

15. The vacuum cleaner according to claim 13 wherein the power cord is arranged in parallel relative to the portable power supply.

16. The vacuum cleaner according to claim 1 wherein the particle separator further comprises an outlet opening and the motor and fan assembly includes an inlet opening connected to the outlet opening of the particle separator for drawing the working air flow through the particle separator.

17. The vacuum cleaner according to claim 1 wherein the motor and fan assembly comprises an inlet opening connected to the first end of the suction conduit and an outlet opening connected to the inlet opening of the particle separator.

18. The vacuum cleaner according to claim 1 wherein the foot assembly further comprises an air conduit coupling and a working air conduit coupled to the suction nozzle at a first end and to the air conduit coupling at a second end, and wherein the portable cleaning module further comprises a hose fitting that removably
5 receives the second end of the suction conduit and mates with the air conduit coupling when the portable cleaning module is mounted to the handle assembly to fluidly communicate the suction nozzle with the particle separator.

19. The vacuum cleaner of any of claims 1-18 wherein the portable cleaning module further comprises a dirt cup removably mounted to the module housing to collect particles separated from the working air flow by the cyclone separator. 20. The vacuum cleaner according to claim 19 wherein the dirt cup is mounted below the cyclone separator.

21. A vacuum cleaner comprising:

a foot assembly having a working air path including a suction nozzle and an air conduit coupling ;

an upright handle assembly pivotally mounted to the foot assembly for manipulation of the foot assembly along a surface to be cleaned; and

a portable cleaning module detachably mounted to the handle assembly so that the vacuum cleaner can be operated as an upright vacuum cleaner when the portable cleaning module is mounted to the handle assembly or as a portable vacuum cleaner when the portable cleaning module is detached from the handle assembly, the portable cleaning module comprising:

a module housing;

a particle separator mounted to the module housing and having an inlet;

an elongated flexible hose having a first end connected to the inlet of the particle separator and a second end removably coupled to the air conduit coupling;

a motor and fan assembly supported in the module housing for creating a working air flow from the suction nozzle to the cyclone particle separator through the suction conduit; and

a portable power source coupled to the motor and fan assembly for supplying power to the motor and fan assembly when the portable cleaning module is detached from the handle assembly for operation of the vacuum cleaner as a portable vacuum cleaner.

22. The vacuum cleaner according to claim 21 wherein the particle separator comprises a bag filter.